Measuring business exit

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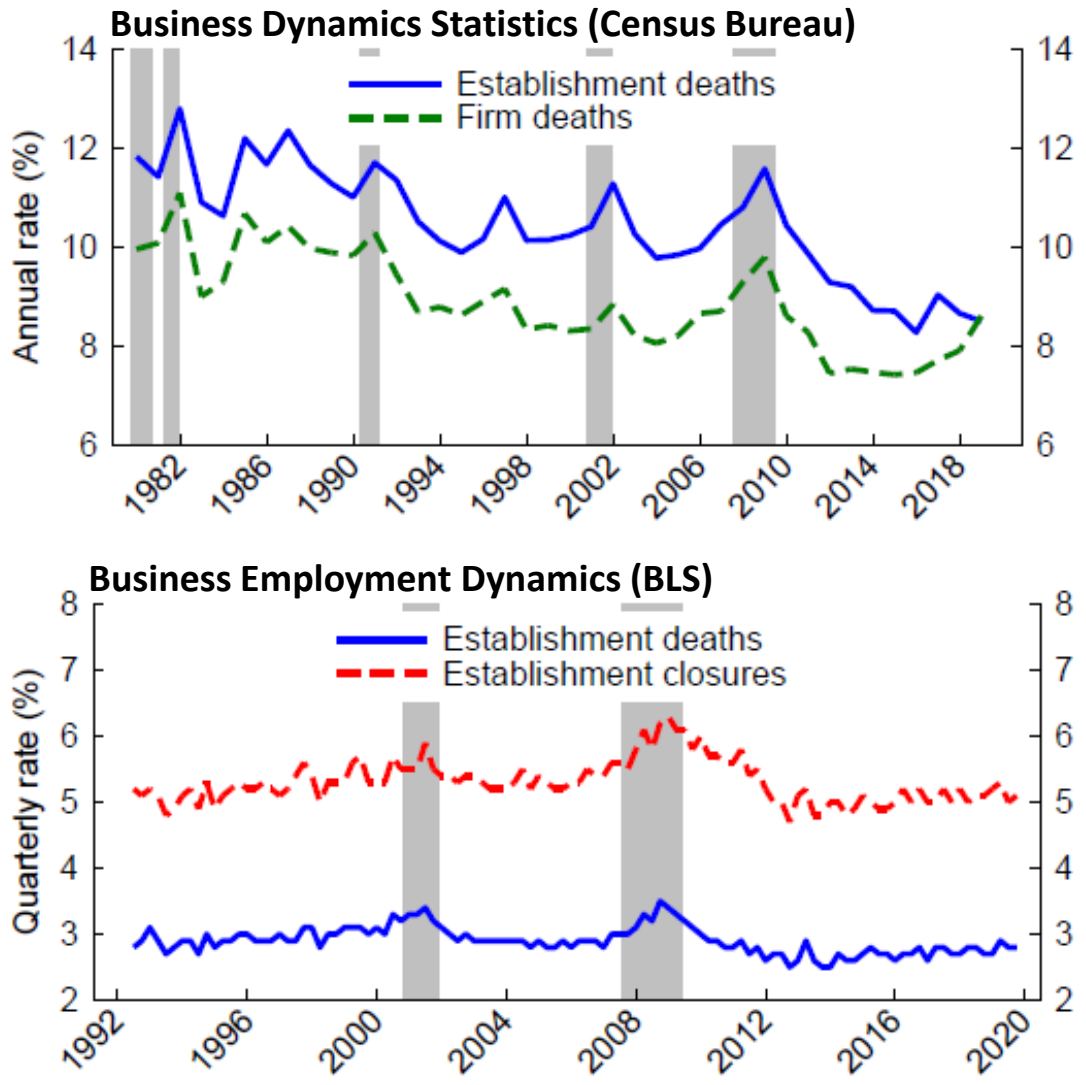
Without implication, this presentation draws on joint work with Tomaz Cajner, Leland Crane, Aaron Flaaen, Adrian Hamins-Puertolas, Christopher Kurz, and Jacob Williams. I thank John Haltiwanger for helpful comments.

Business shutdown stylized facts (2015-2019)

- Annual firm exit (BDS)
  - 8% of firms
  - 2% of employment
- Annual establishment exit (BDS)
  - 8½ % of establishments
  - 3½ % of employment
- Countercyclical (see also Tian 2018)
- Driven by very small (and young) units
  - Though large firms often close some establishments, and more than 5% of 10+ year old firms exit annually (BDS)
- Temporary closure is common: 2% of establishments per quarter (BED)



Calculations for 2015-2018 from Crane, Decker, Flaaen, Hamins-Puertolas, Kurz (2021)

Role of business exit

- Business exit can be healthy and productive
  - Exit is productivity enhancing as lower-productivity firms or establishments are selected (Foster et al. 2016; Decker et al. 2020) and replaced
  - Exit is a natural consequence of business owner lifecycles
- On the other hand, exit:
  - Permanently destroys jobs
    - No recall option; see Fujita & Moscarini (2017)
    - Displacement causes long-term harm (e.g., Davis & von Wachter 2011)
  - May destroy proprietor wealth
  - Destroys intangible/firm-specific capital—and physical capital through reallocation frictions (Cooper & Haltiwanger 2007)
  - May have adverse productivity consequences if selection does not function or if not matched with business creation (e.g., Caballero 2007)
  - Alters economic geography of local communities
- Exit measurement quality matters for productivity, entrepreneurship, competition, and labor market research and policy

COVID-19 highlighted importance of timely exit measurement

- Social distancing and business restrictions led to large revenue declines
  - In Spring 2020, widespread concern for survival prospects of affected businesses
  - Surge of business exits could destroy many jobs, reshape local communities, materially impact proprietor wealth, and reduce potential output
  - Exit selection may not operate productively in pandemic environment
- Robust policy discussion about exit and possible prevention.
- High demand for timely measurement of business exit.

Difficulty of timely exit measurement

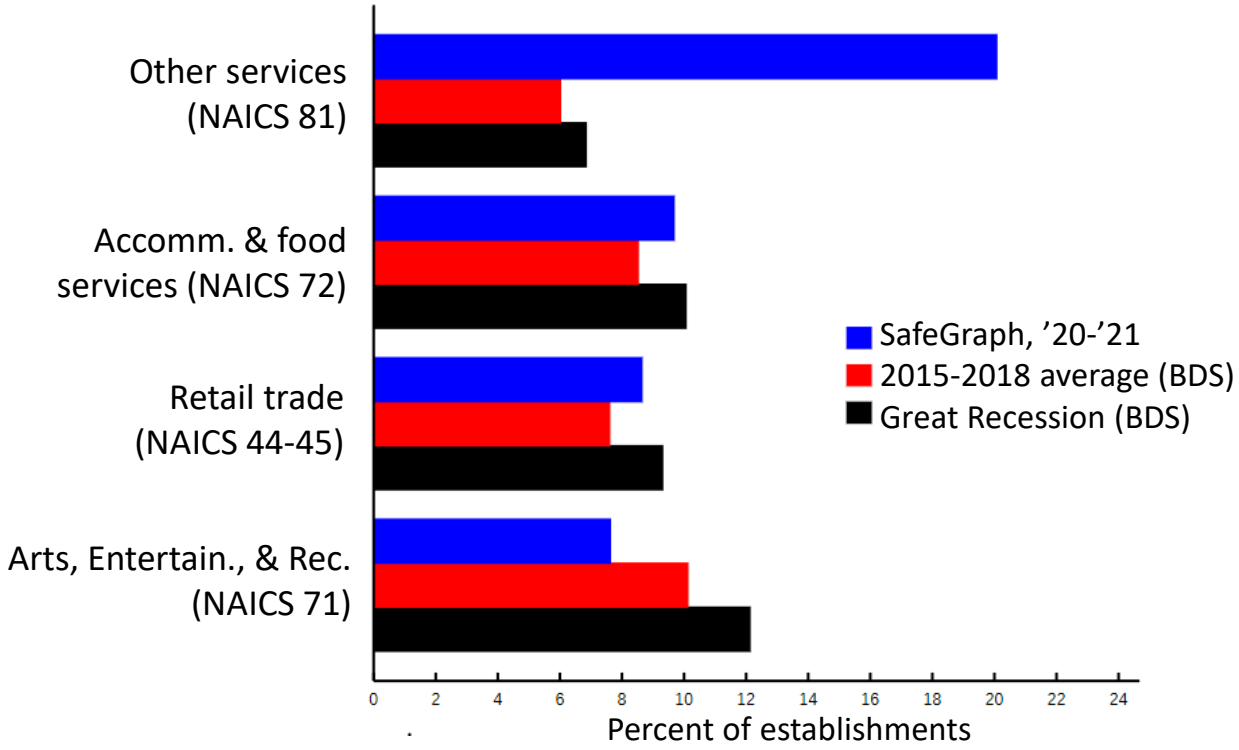
- Official data based on administrative sources are high quality but released with substantial lag
  - Establishment closure data (BLS) lag 2 quarters
  - Establishment exit data (BLS) lag 6 quarters (see Sadeghi 2008)
  - Firm exit data (Census Bureau) lag 2.5 years
- Official exit (and entry) data do not significantly influence key payroll and NIPA data releases (prior to annual revisions)
- During the pandemic, analysts have turned to nontraditional/ alternative data
  - Hamilton (2020), Cajner et al. (2020), Chetty et al. (2020), Kurmann et al. (2021), Crane et al. (2021)
  - Also: Stat agency microdata, e.g. Dalton, Handwerker, and Loewenstein (2020, others); Dalton (2021)

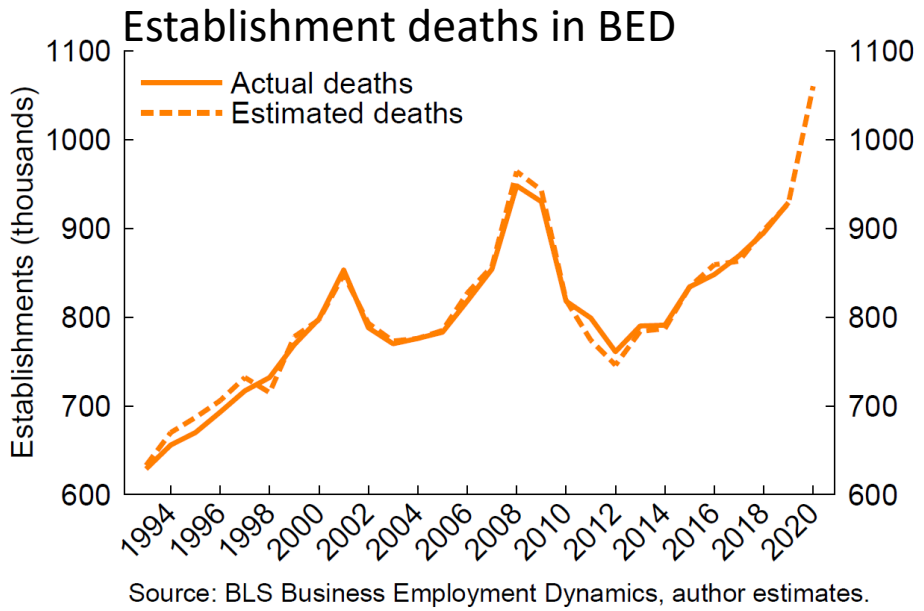
A taxonomy of nontraditional business exit data

1. Business services client databases
   - Examples: ADP, Homebase, Womply
   - Strengths: Timely, high frequency, direct indicators of business activity
   - Weaknesses: Cannot distinguish client turnover from exit
2. Customer-tracking datasets
   - Examples: SafeGraph (cell phones), consumer credit cards
   - Strengths: No client turnover problem
   - Weaknesses: Not useful in some industries
3. Private sector census-, search-, or crowdsource-based business lists
   - Examples: D&B/NETS, Yelp
   - Strengths: Nominal coverage of universe
   - Weaknesses: Measurement requires continual verification by data provider (Crane & Decker 2020)
4. Ad hoc surveys by researchers or statistical agencies
   - Example: Census Bureau Pulse
   - Strengths: Scientific construction of sample
   - Weaknesses: Exit vs. nonresponse

Example: SafeGraph (cell phone tracking data)

- Crane et al. (2021) estimate: <200,000 excess estab exits in pandemic's first year
  - Estimate constructed in near real time
  - Roughly corroborated by recent BED closure/reopen data (see appendix slide)
- Weakness: SafeGraph method does not work in some industries (e.g., construction)





Source: BLS Business Employment Dynamics, author estimates.

Wrapping up

- Exit measurement is important to researchers, forecasters, and policymakers
  - Implications for productivity, entrepreneurship, local economies, and labor markets
- Official (BLS, Census Bureau) exit data:
  - High quality, comprehensive
  - Provide critical context for understanding nontraditional estimates
  - Released with substantial lag
  - Along with entry data, do not directly influence payroll or most NIPA data prior to annual revisions
- Nontraditional data:
  - Timely (some within days) and high frequency (daily, weekly, monthly)
  - Customer attrition, industry specifics, and sample selection limit accuracy
  - May be less useful in other kinds of recessions (pandemic focused on in-person services)

Thanks

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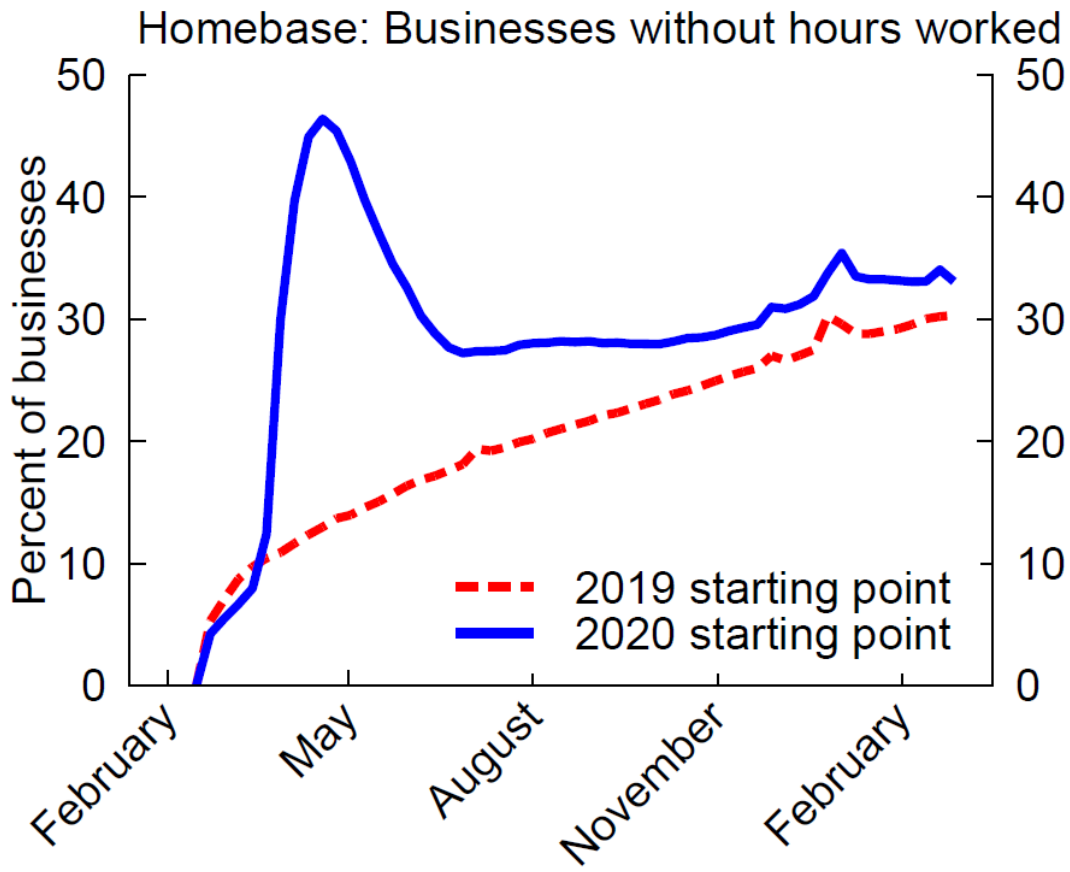
Appendix slides: Taxonomy of nontraditional data on business exit

1. Business services client databases

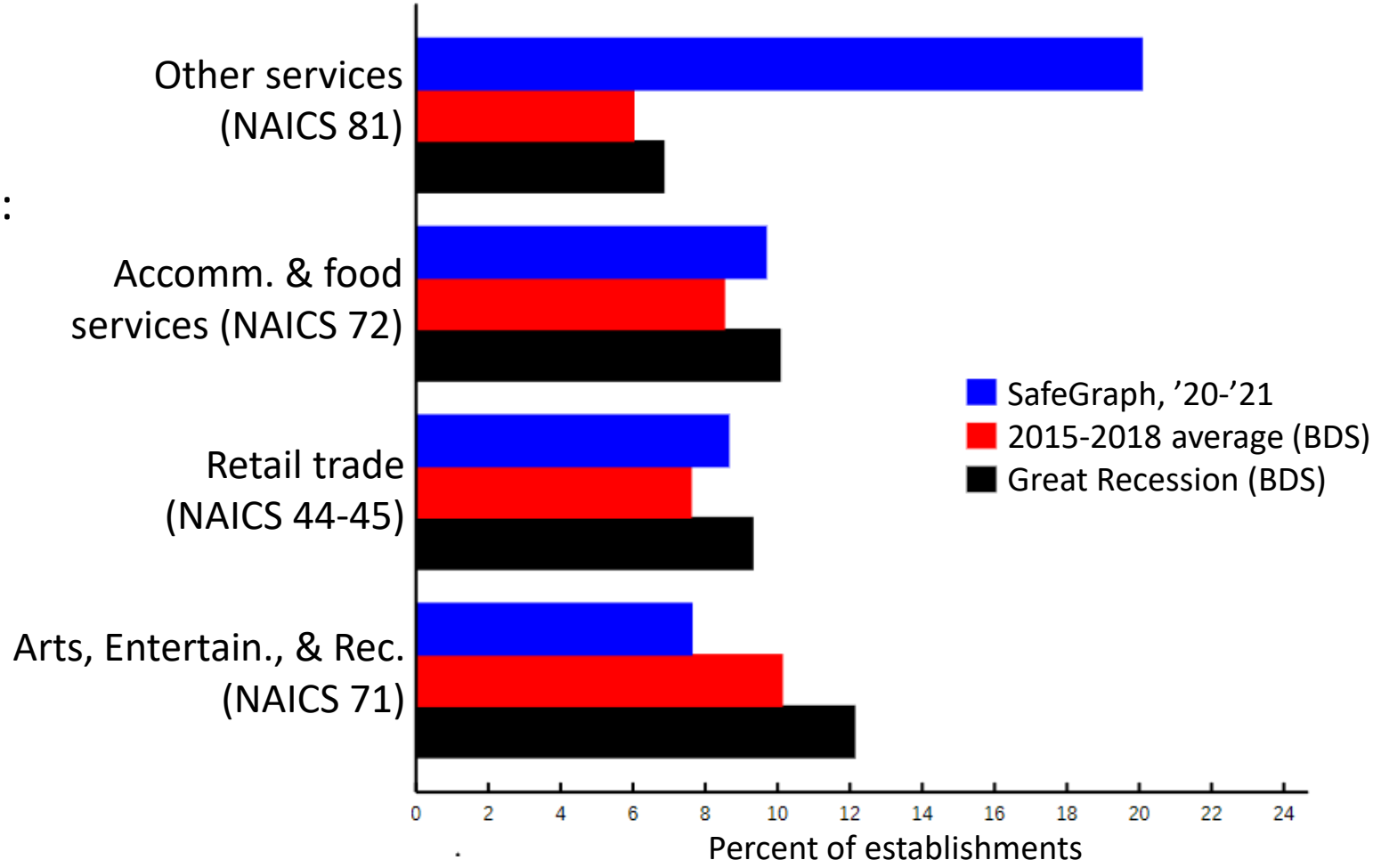
- Observe activity of client businesses
  - Paycheck issuance (ADP)
  - Hours worked (Homebase; also Kronos; Gusto)
  - Revenue transactions (Womply)
- Limitations: Cannot distinguish between client churn and business shutdown



Source: Crane, Decker, Flaaen, Hamins-Puertolas, Kurz (2021)

2. Customer-tracking datasets

- Observe patterns of customer interactions with businesses
  - Consumer credit cards?
  - Phone tracking/customer visit: **SafeGraph**
- Identify establishments with large (65%) y-o-y drop in foot traffic
  - Crane et al. (2021) estimate: <200,000 excess estab exits in pandemic's first year
  - Appears roughly corroborated by BED closure/reopen data
- Limitations: Inappropriate for some industries; short time series



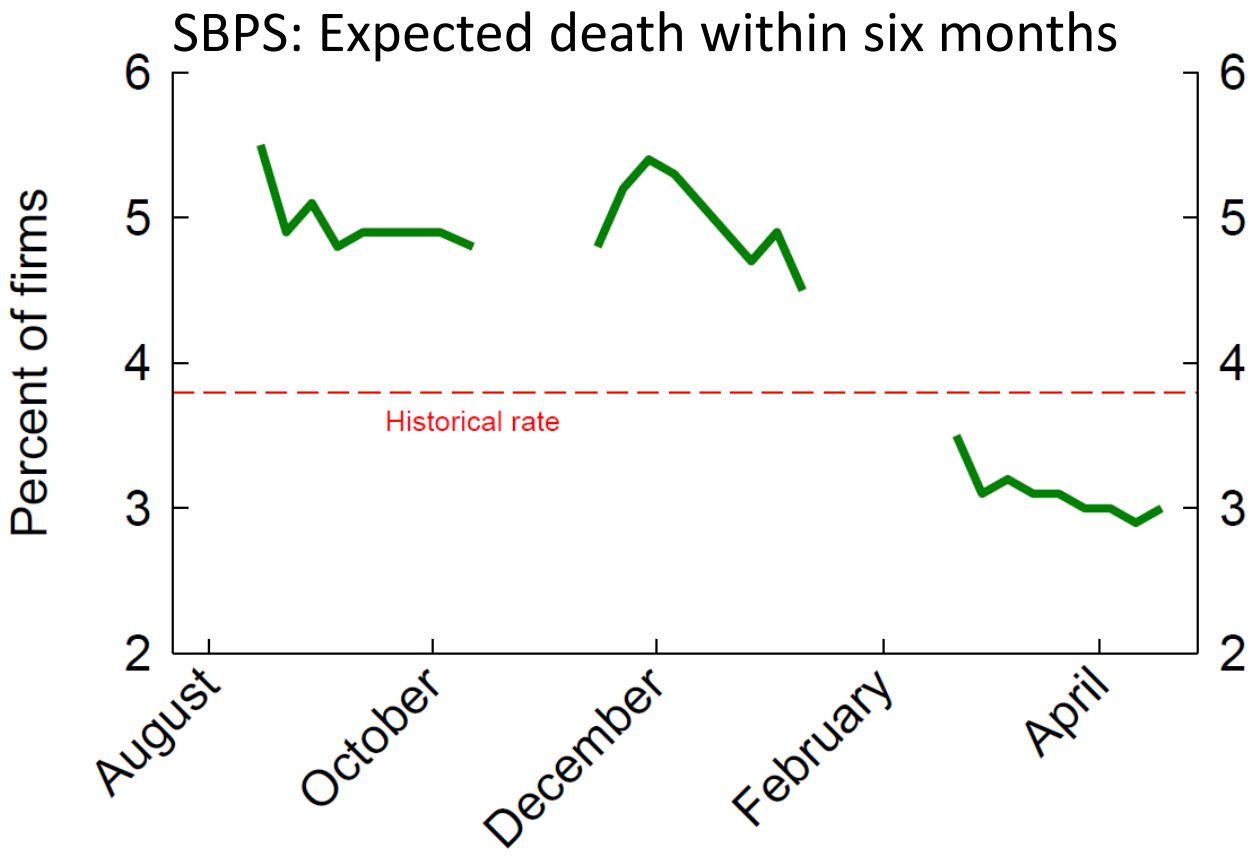
Source: Crane, Decker, Flaaen, Hamins-Puertolas, Kurz (2021)

3. Private sector census-, search-, or crowdsource-based business lists

- Private companies that make it their business to know all the businesses
  - Dun & Bradstreet/National Establishment Time Series (NETS)
  - Infogroup
  - Yelp
- Limitations: Measurement requires continual affirmative monitoring by the data provider—infeasible for millions of businesses
  - Crane & Decker (2020): D&B/NETS tracks business dynamics poorly

4. Ad hoc surveys by researchers or statistical agencies

- Surveys of businesses or business owners
  - Census Bureau Small Business Pulse/SBPS (Buffington, Dennis, Dinlersoz, Foster, Klimek 2020)
  - Bartik, Bertrand, Cullen, Glaeser, Luca, Stanton (2020)
  - CPS (households) (Fairlie 2020)
- Limitations: Nonresponse versus exit

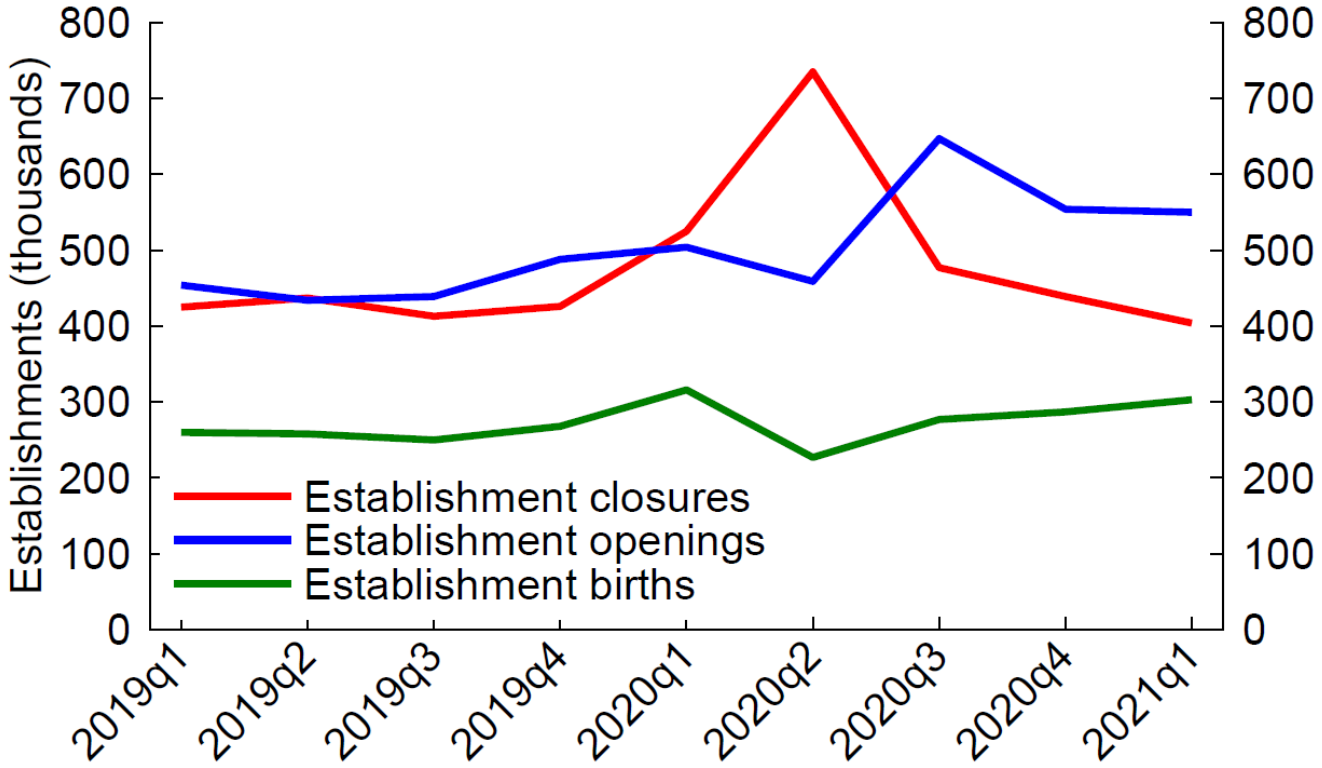


Note: Six month expectations. Data correspond to end of survey week. Historical rate is 2015-2018 from Business Dynamics Statistics.
Source: Census Bureau Business Dynamics Statistics and Small Business Pulse Survey; data through April 12-18 2021.

Appendix slides: Estimating deaths with currently available BED data

BED data through 2020q4

- Surge in *closures* with peak in 2020q2
- Surge in *openings* starting in 2020q3
- Dip in *births* in 2020q2, rising thereafter
  - Death data only available through 2020q1
- Can we infer deaths from closures and openings?



Source: BLS Business Employment Dynamics. Seasonally adjusted.

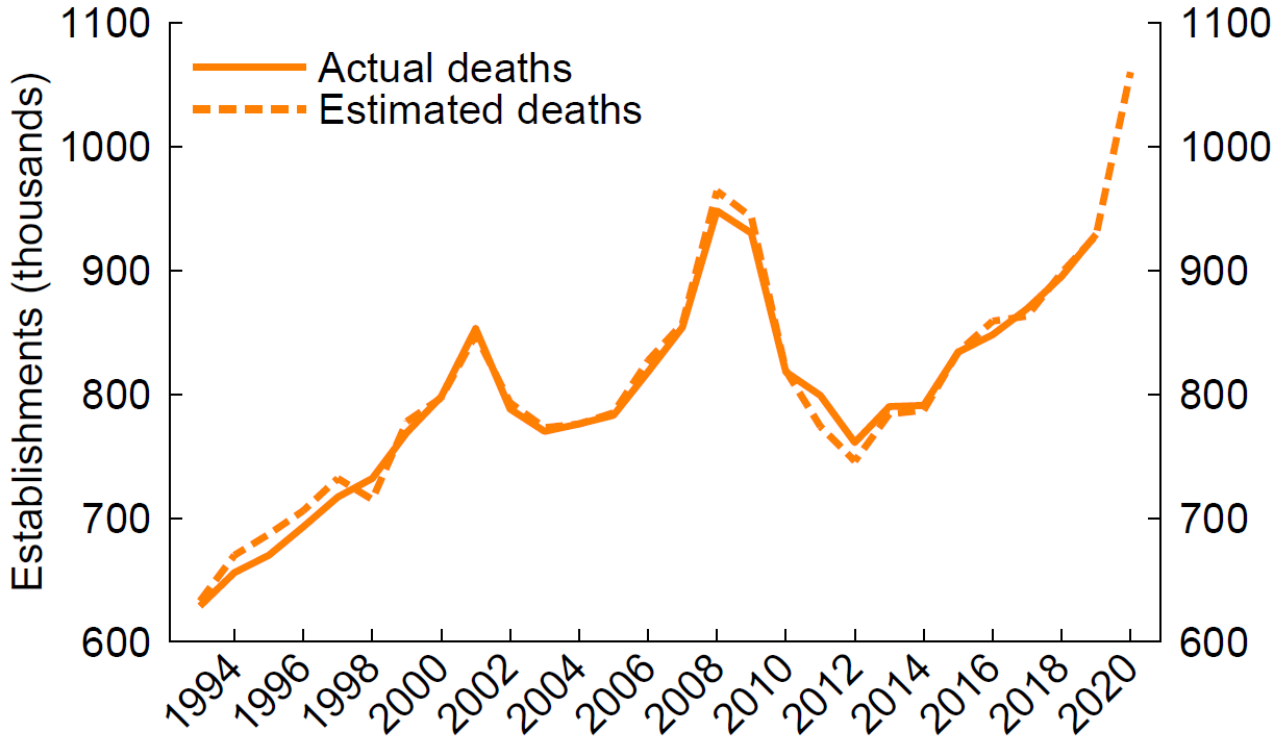
BED-based estimates

- Reopenings = openings – births
- Assume

$$\sum_{q=2020q1}^{2020q4} deaths_q = \sum_{q=2020q1}^{2020q4} closures_q - \sum_{q=2020q2}^{2021q1} reopenings_q$$

Evaluating BED-based estimates

- In 2019, estimated deaths are 928,000 versus 929,000 actual
- 1993-2019 RMSE = 10,000
- Implies 1.06 million deaths in 2020
  - **190,000 excess deaths** versus 2015-2019 average



Source: BLS Business Employment Dynamics, author estimates.